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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,811	02/27/2004	Suda Kazuyuki	51557	7845

7590 12/13/2005  
EDWARDS & ANGELL, LLP  
P.O. Box 55874  
Boston, MA 02205

EXAMINER

WONG, EDNA

ART UNIT PAPER NUMBER

1753

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/788,811

Applicant(s)

KAZUYUKI ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Specification***

The disclosure is objected to because of the following informalities:

page 2, line 28, the word "high" should be amended to the word -- highly --.

page 4, line 3, it is unclear what is meant by "eq/L".

page 4, line 4, it is unclear what is meant by "eq/L".

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 1**

line 5, the claim does not end in a period.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Solution***

I. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782 ('782)**.

JP '782 teaches an electrolytic tin-plating solution, having a pH value of 1.5-6.0 (= pH is 2-9) [page 3, [0009]] and comprising:

- (1) 5-40 g/L of tin(II) ion (= tin ion) [page 2, [0007]],
- (2) a complexing agent (= a polyoxymonocarboxylic acid, polyoxylactone and their salts) [pages 1-2, [0004] to [0006]],
- (3) a surfactant (= a brightener, a nonionic surface active agent) [page 2, [0008]],  
and
- (4) 0.2-40 g/L of bismuth(III) ion (= trivalent bismuth ion) [page 2, [0007]].

The electrolytic tin-plating solution further comprises a conducting salt (= an alkali metal salt, an alkaline earth metal salt, an ammonium salt, etc., in order to make good energization nature at the time of plating) [page 2, [0008]], an anode-dissolving agent or an antioxidant

The surfactant is a nonionic surfactant (= a nonionic surface active agent) [page

2, [0008]].

The solution of JP '782 differs from the instant invention because JP '782 does not disclose the following:

- a. 5-60 g/L of tin(II) ion, as recited in claim 1.
- b. 0.01-0.5 g/L of bismuth(III) ion, as recited in claim 1.

JP '782 teaches **5-40** g/L of tin(II) ion and **0.2-40** g/L of bismuth(III) ion (page 2, [0007]),

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists (MPEP § 2144.05(I)).

#### *Method*

II. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782** ('782) as applied to claims 1-3 above.

JP '782 is as applied above and incorporated herein.

JP '782 also teaches a method for electrolytic tin plating, characterized by using the electrolytic tin-plating solution described claim 1 for electrolytic tin plating (= galvanizing) on electronic parts (= copper and composite part of lead glass) [page 3, [0010]; and page 5, [0021]].

*Solution*

III. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Saitoh et al.** (US Patent No. 6,500,327 B1).

Saitoh teaches an electrolytic tin-plating solution, having a pH value of 1.5-6.0 (= pH is 2-9) [col. 4, lines 21-30] and comprising:

- (1) about 0.1-0.5 mol/l of tin(II) ion ( $= \text{Sn}^{2+}$ ) [col. 4, lines 16-20],
- (2) a complexing agent (col. 4, lines 40-52),
- (3) a surfactant (= a brightener, a nonionic surface active agent) [col. 4, line 64 to col. 5, line 7], and

- (4) about 0.005-0.2 mol/l of bismuth(III) ion ( $= \text{Bi}^{3+}$ ) [col. 4, lines 16-20].

The electrolytic tin-plating solution further comprises a conducting salt (col. 4, lines 53-58), an anode-dissolving agent or an antioxidant (col. 5, lines 7-11).

The surfactant is a nonionic surfactant (col. 4, line 64 to col. 5, line 7).

The solution of Saitoh differs from the instant invention because Saitoh does not disclose the following:

- a. 5-60 g/L of tin(II) ion, as recited in claim 1.
- b. 0.01-0.5 g/L of bismuth(III) ion, as recited in claim 1.

Saitoh teaches **about** 0.1-0.5 mol/l of  $\text{Sn}^{2+}$  and **about** 0.005-0.2 mol/l of  $\text{Bi}^{3+}$  (col. 4, lines 16-20).

The invention as a whole would have been obvious to one having ordinary skill in

the art at the time the invention was made because in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists (MPEP § 2144.05(I)).

*Method*

IV. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Saitoh et al.** (US Patent No. 6,500,327 B1) as applied to claims 1-3 above.

Saitoh is as applied above and incorporated herein.

Saitoh also teaches a method for electrolytic tin plating, characterized by using the electrolytic tin-plating solution described claim 1 for electrolytic tin plating on electronic parts (= electronic components) [col. 5, lines 14-21].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

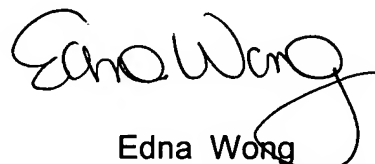
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Edna Wong". The signature is fluid and cursive, with a large loop at the end of the last name.

Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
December 7, 2005